NSPS OOOOa Technical Package: Options Selection

Pre-OS Briefing with Bill Wehrum

TOPIC: Pre-Options Selection informational briefing regarding final amendments to the 2016 New Source Performance Standards (NSPS) (40 CFR, part 60, subpart OOOOa).

BACKGROUND

* On October 15, 2018, EPA proposed technical amendments to the 2016 NSPS OOOOa, with the comment period closing on December 17, 2018.

* EPA received approximately 200 substantive comments (over 500,000 total comments) from various stakeholders including industry, environmental groups, states, congressional offices and the public.

o Additional data related to fugitive emissions requirements was received from 15 commenters.

o These briefing materials include all topics that will be addressed in the final rule.

RECORDKEEPING AND REPORTING

* Several industry commenters indicated that recordkeeping and reporting are the greatest cost burden for the fugitive emissions program.

o Commenters stated that EPA had underestimated recordkeeping and reporting cost burden in the 2016 rule and 2018 proposal.

* After considering these comments, we updated our estimates of the 2016 rule and evaluated specific changes for this final rule:

o Added cost estimates for a recordkeeping database system, including ongoing annual support, based on information from commercial software companies and data provided by API; and

o Reduced burden estimates for recordkeeping and reporting based on other revisions (see below).

Recommended Revisions

Monitoring Plan

* Remove sitemap, plot plan, observation path, inventory or other specified narrative.

o Replace specific requirements with a general requirement that establishes a procedure to ensure all fugitive emissions components are monitored.

* Include examples in the reg language; however, industry would not be limited to these examples. This would allow industry to specify company/site-specific mechanisms to comply with the requirement to monitor all fugitive emissions components.

Recordkeeping

* Clarify that BOE records are only necessary if the site is claiming low production.

* Remove:

o The number and type or digital photo of components not repaired during the monitoring survey.

o Date and repair methods for each repair attempt; limit only to date of first attempt at repair and date of successful repair. Note: We do recommend expanding the current requirement so that these repair dates are recorded for all fugitive emissions, not just those that are not repaired during the inspection.

Reporting

* Create dropdowns for type of well site, if well site changed status to become a wellhead only site, and if the well site is low production, in lieu of the items in the following bullet. While these would be new reporting elements, they would replace some

in the proposal.

* Remove:

o Date(s) of production startup, compressor station startup, equipment removal when a site becomes a wellhead only well site, well ID where production is sent, when equipment is added back to the site and calculation of BOE for low production well sites.

o Name or ID of operator performing the survey.

o Number and type of difficult-to-monitor (DTM) and unsafe-to-monitor (UTM) components monitored.

o Date of successful repair.

o Type of instrument used for resurvey.

AMEL: Recommended Revisions

Emerging Technologies

* Allow applications from owner/operator alone or in conjunction with a manufacturer, vendor, or trade associations.

* Add language that allows option for future use of an approved AMEL at sites with the same owner/operator, within the same basin, and with similar operating conditions and equipment. Specific conditions of this future use would be provided within the AMEL itself and separate from NSPS OOOOa.

Equivalent State Fugitive Programs

* Application process for equivalent state fugitive programs;

* State-specific alternative standards for equivalent programs already evaluated. These alternative standards replace the monitoring, repair, recordkeeping, and reporting of NSPS OOOOa but maintain the requirement for a monitoring plan and to monitor all fugitive emissions components as defined in NSPS OOOOa.

Note: We may need to adjust the alternative standards for well sites in Texas and Ohio. These states allow for a reduction in monitoring frequency down to annual. We would either need to remove the alternative standards for those well sites or keep them on the condition that monitoring frequency does not go below semiannual.

STORAGE VESSELS: Recommended Revisions

Based on decisions made during Early Guidance we recommend finalizing separate requirements for storage vessels that are subject to legally and practically enforceable limits, provided those limits include the following:

* Are equipped with a closed vent system (CVS) that is designed and operated to route vapors to a process or to a control device; and

* The control device has a manufacturer-design destruction efficiency of at least 95%.

* These storage vessels would be subject to fugitive emissions monitoring and would eliminate the need for estimating potential VOC emissions and averaging emissions across a system of tanks.

* In addition, we plan to finalize, as proposed, the definition of "maximum average daily throughput" to specify how storage vessels calculate throughput for PTE calculations when the storage vessel does not meet the permit requirements above.

CLOSED VENT SYSTEMS: Recommended Revisions

Monitoring Requirements

* The current rule requires that CVS are designed and operated with no detectable emissions, as demonstrated in the following methods:

o Compressors: Annual Method 21, instrument reading <500 ppm above background.

o Pneumatic Pumps: Annual Method 21, instrument reading <500 ppm above background.

o Storage Vessels: Monthly audio, visual, olfactory (AVO) monitoring.

* The proposed rule realigned pneumatic pumps inspections with storage vessels (i.e., monthly AVO instead of annual Method 21). Commenters requested an option to monitor CVS during the fugitive emissions survey and using OGI.

* The changes for storage vessel requirements discussed above are expected to substantially decrease the number of CVS subject to monthly AVO inspections.

Option 1 (recommended): Provide options for CVS monitoring at well sites using either annual Method 21, monthly AVO, or OGI monitoring on the schedule of fugitive emissions monitoring.

Option 2: As proposed, finalize required monthly AVO inspections for pneumatic pumps and storage vessels and annual Method 21 inspections for compressors.

FUGITIVE EMISSIONS MONITORING: Recommended Revisions

* The current 2016 rule requires monitoring frequencies for all well sites (semiannual) and compressor stations (quarterly).

* The 2018 proposal included monitoring frequencies for non-low production well sites (annual), low production well sites (biennial) and compressor stations (semiannual: co-proposal with annual).

* We received various stakeholder comments that contributed to updates in the model plants:

o Updated major production equipment for well sites based on the 2017 GHGI activity counts.

o Updated estimates of low production well site equipment based on comments submitted by IPAA and review of data in the Fort Worth Study.

o Reduced the total cost per survey based on survey times reported in the 2017 and 2018 annual compliance reports for NSPS OOOOa.

o Reduced the total number of leaks requiring repairs based on the reported leaks in the 2017 and 2018 annual compliance reports, and data provided by API and GPA Midstream.

o Updated estimates for recordkeeping and reporting as previously discussed.

Key observations from data (See Appendix 1)

* Highest emission reductions at reasonable cost points to semiannual (all well sites) and quarterly (compressor stations).

* Incremental VOC cost-effectiveness points to semiannual (non-low production), semiannual or biennial (low production), and quarterly or semiannual (compressor stations).

* Lowest cost points to annual (non-low production and compressor stations) and biennial (low production).

Other considerations beyond cost-effectiveness

* The majority of the costs are related to recordkeeping and reporting and are annual. Monitoring frequency has less of an effect on the overall cost of the program.

* Monitoring can stop when major production and processing equipment is removed from the site and it becomes a wellhead only well site.

* Potential for an off-ramp to less frequent monitoring as well sites become low production well sites, based on a 12-month average production <15 barrels of oil equivalent (BOE) per day.

o We are working on analyzing the potential impacts of an off-ramp. Preliminary analysis indicates that an off-ramp would affect a majority of well sites within about 10 years of the well site initiating production.

o Currently in OMB review, the policy proposal argues that the NSPS might accumulate sources via industry growth and equipment turnover, reducing the need for an existing source standard. An off-ramp provision might weaken this argument.

* Definition of low production was proposed based on the first 30 days of production; however, commenters requested we base this on 12-months of production.

* GSI Environmental is conducting a study, funded by DOE, to measure fugitive emissions from low production well sites. Study is expected to be completed within 16 months of the March 2019 start date.

* In the 2013 storage vessel reconsideration, we deemed $5,100/ton VOC (2007$) cost-effective. Adjusting to 2016$, this figure is approximately $5,800/ton VOC.

OTHER FINAL RULE REQUIREMENTS: Recommended Revisions

Fugitive Emission Requirements

Modification: Maintain modification triggers for well sites and compressor stations, which was included in the 2018 proposal and 2016 rule.

* Well sites: (1) drilling a new well; (2) fracturing a well at an existing well site; or (3) refracturing a well at an existing well site.

* Compressor stations: (1) installation of a new compressor; or (2) replacement of a compressor with one or more compressors of greater horsepower.

* As proposed, finalize modification triggers for separate tank batteries, which are well sites.

o Separate tank batteries: (1) perform tasks for wells located at the tank battery; (2) complete items for wells located at an offsite well site that sends production to the tank battery; or (3) a well site that removed all equipment to become a wellhead only site sends production to the tank battery.

Initial Monitoring: Revise initial monitoring from 60 days to within 90 days of startup of production for well sites or startup of compressor stations to provide additional time for normal operating conditions to be achieved at the site.

Repair: Revise repair requirements such that first attempt at repair within 30 days of fugitive detection, final repair within 30 days of first attempt.

Delay of Repair (DOR): Revise DOR requirements to mandate repair of delayed repairs during next scheduled compressor station shutdown for maintenance.

Professional Engineer (PE) Certification: Finalize as proposed with option for PE or in-house engineer with appropriate knowledge of the CVS design to certify it is designed as required.

Pneumatic Pumps: Finalize amendments for pneumatic pumps as proposed and extend technical infeasibility exemptions to boilers and process heaters.

Well Completions: As proposed, finalize clarification of separator location and slight modifications to definitional changes, and simplify recordkeeping and reporting requirements for operators who start production immediately after completing the well.

Onshore Natural Gas Processing Plants: Finalize change to the definition of "capital expenditure" for gas plants to use the Consumer Price Indices as a representation of inflation. Finalize, as proposed, an exemption from monitoring for equipment in VOC service less than 300 hrs/yr.

Recordkeeping and Reporting: Finalize CEDRI reporting template.

Technical Corrections and Clarifications: Finalize technical corrections and clarifications as proposed.

ANTICIPATED SCHEDULE

OAR Options Selection

June 21, 2019

Final Agency Review

July 2019

OMB Review of Final Package

August 2019

This action has been designated a Tier 2, significant rulemaking.

APPENDIX

Table 1. Nationwide Summary: Monitoring Frequencies Based on a Weighted-Average by Site Sub-type (2019)

Frequency

Methane Reduction (tpy)

VOC Reduction (tpy)

Total Annualized Cost without Savings ($M/yr)

Methane Cost-Effectiveness without Savings ($/ton)

Incremental Methane Cost-Effectiveness without Savings ($/ton)

VOC Cost-Effectiveness without Savings ($/ton)

Incremental VOC Cost-Effectiveness without Savings ($/ton)

Non-Low Production Well Sites

Annual

36,500

10,100

$62.0

$1,700

-

$6,100

-

Semiannual

54,700

15,200

$78.0

$1,400

$900

$5,100

$3,200

Quarterly

73,000

20,300

$119.0

$1,600

$2,200

$5,900

$8,100

Low Production Well Sites

Biennial

5,800

1,600

$9.2

$1,600

-

$5,700

-

Semiannual

11,600

3,200

$18.6

$1,600

$800

$5,800

$5,900

Compressor Stations

Annual

10,500

2,100

$7.4

$700

-

$3,600

-

Semiannual

15,800

3,100

$10.3

$650

$550

$3,300

$2,800

Quarterly

21,100

4,100

$16.1

$760

$1,100

$3,900

$5,600